AMENDMENTS TO THE CLAIMS

1. (Currently amended) A shaft for the transmission of torsional loads, the shaft comprising:

an elongated inner tube member having opposing open ends;

at least one end piece located adjacent at least one end of the inner tube member;

a composite material covering the inner tube member and at least a portion of the end piece; and

wherein the portion of the end piece covered by the composite material defines a convexly curved are of the end piece.

2. (Original) The shaft of claim 1 wherein the composite material includes elongated fibers, and the fibers are oriented at an angle which satisfies the condition that the angle of twist of the inner tube at failure equals the angle of twist of the composite material at failure.

3. (Currently amended) The shaft of claim 1 wherein the composite material includes elongated fibers, and substantially all of the fibers are oriented at a single angle which satisfies the conditions that the shaft have a first natural frequency greater than a predetermined maximum rotational operating speed, the shaft have ~~an ultimate~~ a maximum operating torque strength which exceeds a predetermined ~~maximum~~ operating

torque, and the angle of twist of the inner tube at failure equals the angle of twist of the composite material at failure.

4. (Original) The shaft of claim 1 wherein an end piece is provided at each end of the shaft.

5. (Original) The shaft of claim 4 wherein torsional loads are transmitted from the end pieces to the composite material through multiple load paths.

6. (Currently amended) The shaft of claim 5 wherein the multiple load paths comprise a direct connection between the end pieces and the composite material, and ~~an indirect~~ a connection from the end pieces to the inner tube and a connection from the inner tube to the composite material.

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7. (Original) The shaft of claim 1 wherein the composite material includes elongated fibers which are oriented relative to the curvature of the portion of the end piece covered by the composite material such that, in the area of the portion of the end piece covered by the composite material, shear loads in the composite material are transferred longitudinally along the length of the fibers.

8. (Original) The shaft of claim 7 wherein the portion of the end piece covered with the composite material defines a geodesic isotensoid elliptical shape derived with reference to the angle of the fibers.

9. (Original) The shaft of claim 1 wherein the inner tube comprises a mandrel used in forming the composite material on the shaft.

10. (Original) The shaft of claim 9 wherein an end piece is provided at each end of the shaft and the inner tube provides alignment between the end pieces during formation of the shaft.

11. (Original) The shaft of claim 1 further including a sacrificial layer covering the composite material.

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12. (Currently amended) The shaft of claim 11 wherein the sacrificial layer comprises a ~~thin~~ layer thinner than ~~, relative to~~ the composite material, and includes fibers oriented at approximately 90 degrees relative to the elongated inner tube member.

13. (Original) A shaft for the transmission of torsional loads, the shaft comprising:

an elongated inner tube member;

an end piece located adjacent each end of the inner tube member;

a composite material covering the inner tube member and at least a portion of each of the end piece; and

wherein the composite material includes elongated fibers and the portions of the end pieces covered with the composite material defines a geodesic isotensoid elliptical shape derived with reference to the angle of the fibers such that, in the area of the portions of the end pieces covered by the composite material, shear loads in the composite material are transferred longitudinally along the length of the fibers.

14. (Currently amended) The shaft of claim 13 wherein substantially all of the fibers are oriented at a single angle which satisfies the conditions that the shaft have a first natural frequency greater than a predetermined maximum rotational operating speed, the shaft have ~~an ultimate~~ a maximum operating torque strength which exceeds a predetermined ~~maximum~~ operating torque, and the angle of twist of the inner tube at failure equals the angle of twist of the composite material at failure.

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15. (Original) The shaft of claim 13 wherein torsional loads are transmitted from the end pieces to the composite material through multiple load paths.

16. (Currently amended) The shaft of claim 25 wherein the multiple load paths comprise a direct connection between the end pieces and the composite material, and ~~an indirect~~ a connection from the end pieces to the inner tube and a connection from the inner tube to the composite material.